

Date: Wednesday, 12/27/2006 10:24:49 AM
 User: Eric Charbonneau

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : AFT CROSSTUBE
Job Number : 23964	
Estimate Number : 10377	
P.O. Number : N/A	Part Number : D2890
This Issue : 12/27/2006 S.O. No. : N/A	Drawing Number : D2890 REV B
Prsht Rev. : NC	Project Number : N/A
First Issue : 11/14/2005 Type : PURCHASED PARTS	Drawing Revision : B
Previous Run : 22534	Material : N/A
Written By : <u> </u>	Due Date : 6/2/2006
Checked & Approved By : <u> </u>	Qty: 15 Um: Each
Comment : Est. D 05.03.21 : Removed Bending procedures KJ/JLM	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0

PG

PURCHASING



Comment: Setup: 0.00Hrs/ Run: 0.0000Hrs Total Run : 0.0000Hrs

PURCHASING

Issue P/O: 2008430

a) Extrude as per Dwg D6008 length = 180" (Ref. D6008-180)

b) Material: 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11)) Seamless aluminum tube

c) Minimum ultimate tensile strength = 77ksi

d) Minimum tensile yield strength = 66ksi

e) Material certification required

(17)

2.0

D6008180

Crosstube extrusion



Comment: Qty.: 1.0000 Each(s)/Unit Total : 15.0000 Each(s)

Aft Crosstube

3.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: Setup: 0.00Hrs/ Run: 0.0000Min Total Run : 0.0000Hrs

PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure material certification is attached

DP 7-10-22

(16)

4.0

QC6

DIMENSIONAL CHECK



Comment: Setup: 0.00Hrs/ Run: 0.0000Hrs Total Run : 0.0000Hrs

DIMENSIONAL CHECK

Inspect dimensions as per Dwg D6008 and check 180" length

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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT CROSSTUBE

Job Number: 23964

Part Number: D2890

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: Setup: 0.00Hrs/ Run: 0.0000Min Total Run : 0.0000Hrs

HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

Inside and outside of tube

m-r/jb

06/12/29

6.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: Setup: 0.00Hrs/ Run: 0.0000Hrs Total Run : 0.0000Hrs

INSPECT POWDER COAT/CHEMICAL CONVERSION

7.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: Setup: 0.00Hrs/ Run: 0.0000Min Total Run : 0.0000Hrs

PACKAGING RESOURCE #1

Identify and Stock

Location: _____

8.0

DC

DOCUMENT CONTROL



Comment: Setup: 0.00Hrs/ Run: 0.0000Hrs Total Run : 0.0000Hrs

DOCUMENT CONTROL

Inspection Level 21

Job Completion



already closed

DART AEROSPACE LTD	Work Order:	23964
Description: Aft Crosstube	Part Number:	D2890
Drawing: D2890 Rev. B; D6008 Rev. A	Qty:	15
		Page.1 of 1

Step	Location	Procedure	By	Date	Qty
1	DC	Issue Traveller Dwg not required	U	05.08.05	15
2	PG	Issue P/O: 2008430 a) Extrude as per Dwg D6008 length = 180" (Ref. D6008-180) b) Material: 7075-T6/T6511 (WW-T-700/7, or QQ-A-225/9 or QQ-A-200/11)) Seamless aluminum tube c) Minimum ultimate tensile strength = 77ksi d) Minimum tensile yield strength = 66ksi e) Material certification required	U	05.08.05	15
3	RG	Receive and inspect for transit damage Ensure material certification attached	LY	05.10.03	17
4	QC6	Inspect dimensions as per Dwg D6008 and check 180" length	LY	05.12.07	17
5	FP	Acid etch and alodine as per QSI 005 4.1 Inside and outside of tube			
6	QC3	Inspect Acid etch and Alodine			
7	ST	Identify and stock			
8	AC	Cost / part:			
9	DC	Close W/O Inspect Level 21			

Rev	Date	Change	Revised By	Approved
A	99.05.31	New Issue, ECN 200	DM	
B	00.04.11	Remove painting step	EC	
C	02.10.18	Re-format; Added spec	KJ	
D	05.03.21	Removed Bending procedures	KJ/JLM	

RELEASED
11/05/08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

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Job Costing Report

Dart Aerospace Ltd.
Hawkesbury

Aug 04, 2005
03:24 pm

Work Order No	:	0023964	Department Code:	
Project Name	:	D2890	Burden Flags	: NNNNNNNN
Project For	:	WK543	WO Status	: Open
Work Order Type	:	Main	Invoice State	: Not Invoiced
Main WO Number	:		Invoice Date	:
House Part Number	:	D2890	Invoice Number	:
Description	:	Aft Crosstube	Invoice Amount	: 0.00
Manufactured	:	Yes		
Amount Req'd	:	15	Order Entry No	:
Amount Done	:	0	OE Value	: 0.00
Start Date	:	08-04-05		
Est Finish Date	:	10-29-05	Est Margin	: 0.000%
Act Finish Date	:		Actual Margin	: 0.000%
Drawings Req'd	:	No		
Ok for Approval	:			
Approval Rec'd	:		\$0 Posted to Finished Goods	

	Estimated	Actual	Var. %	Posted	To Post
Material Cost	0.00	0.00	0.00	0.00	0.00
Engineering Hours	0.00	0.00	0.00		
Engineering Cost	0.00	0.00	0.00	0.00	0.00
Production Hours	0.00	0.00	0.00		
Production Cost	0.00	0.00	0.00	0.00	0.00
Packaging Hours	0.00	0.00	0.00		
Packaging Cost	0.00	0.00	0.00	0.00	0.00
OverHead Hours	0.00	0.00	0.00		
OverHead Cost	0.00	0.00	0.00	0.00	0.00
CNC Hours	0.00	0.00	0.00		
CNC	0.00	0.00	0.00	0.00	0.00
Misc. Hours	0.00	0.00	0.00		
Misc.	0.00	0.00	0.00	0.00	0.00
Burden	0.00	0.00	0.00		
Total Cost	0.00	0.00	0.00		
Margin	0.000	0.000			
Selling Cost	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done	0.00	0.00
Profits/(Loss)	0.00	0.00



Abnahmeprüfzeugnis 3.1 - EN 10204:2004

Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004

Kunde: Dart Aerospace Ltd.
Client:

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Produkt:

Product / Produit:

Spezifikation:

Specification:

Werkstoff:

Alloy/Alliage:

Abmessung

Size / Dimension

Kennzeichnung

Marking/Marquage:

7075

3,250 INCH x 2,374 INCH x 0,438 INCH x 180,000 INCH

Article D6008-180 3.250" x 0.438" buff finish

ALUnna-cert No. 723/05-7075-16511-cast No. 79609-AM5-QQA-200/11E-3.250" Od X 0.438" Wall-Heat No. 85/09-lot 15301/8-1P.O. 2008430

Zeugnisnummer: 723/05

Cert No.: / No. du certificat:

Bestellnummer: 2008430

Order No. / No. de commande

Auftrag: 15301/8

Our Reference/Notre Reference:

Zustand: T 6511 ✓
Temper/Etat

Lieferung

Delivered Material / Matériel délivré:

pcs.

lbs

17

1206

1. Chemische Analyse

Chemical Analysis / analyse chimique

Charge/ Cast No.	min. max.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
79609		0,40	0,50	1,2	0,30	2,1	0,18	5,1	0,20					
		0,093	0,173	1,49	0,034	2,50	0,199	5,82	0,037	0,007	0,016	0,003	<0,001	0,005

Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min.	77,0	66,0				
max.						
1	87,435	81,490	10,0		174	85/09 - 17 pcs.
2	87,580	81,635	10,0		176	

**Ergebnis der
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht.

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

KroosD



Certified acc. to DIN EN ISO 9001:2000, valid until 2006-03-09
Certificate No.: 001959 QM



ALUnna

Abnahmebeauftragter

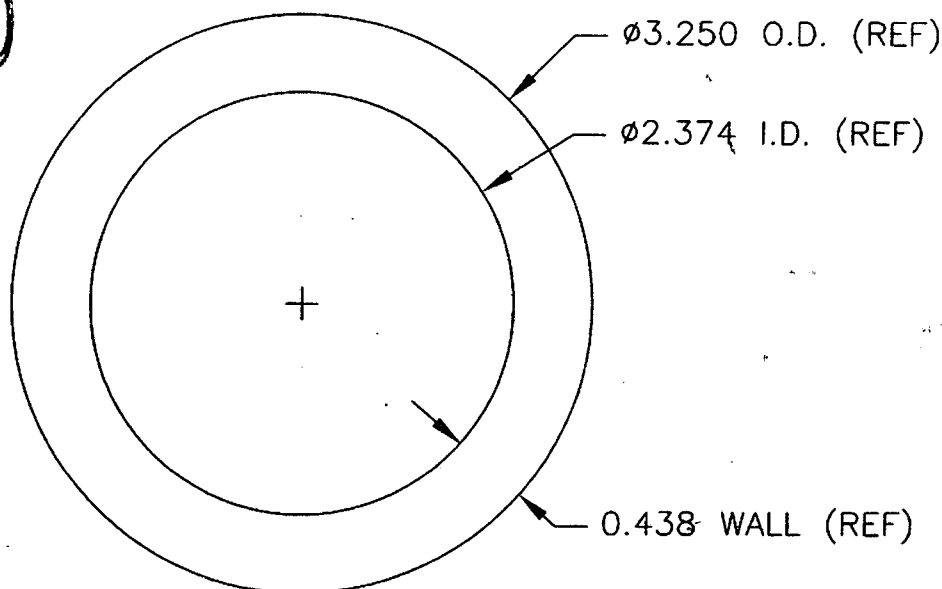
27.09.2005



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6008	REV. A SHEET 1 OF 1
DATE 00.11.17		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.17	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24



NOTES

- 1) D6008-XXX CROSSTUBE

LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 180" LONG TUBE: D6008-180

- 2) MATERIAL: 3.250 OD x 0.438 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.008 MEAN (± 0.016 INCLUDING OVALITY)
WALL: ± 0.020 MEAN (± 0.044 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.125/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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